

REMARKS

Claims 1-49 are pending in the application, with claims 22-35 being under examination. Claims 1-21 and 36-49 have been withdrawn from consideration as being directed to a non-elected invention. Claims 22, 24 and 30 have been amended above. Support for the amendments can be found throughout the application as filed. In particular, support for the amendment directed to a physical perturbation can be found at, for example, page 30, lines 14-17. Support for the amendment directed to a multidimensional coordinate point including n parameters can be found at, for example, page 17, line 25 through page 18, line 11; page 37, lines 11-24; page 40, lines 6-10, and at page 52, line 7 through page 54, line 3. Applicants have reviewed the rejections set forth in the Office Action mailed September 1, 2004, and respectfully traverse all grounds for the reasons that follow.

Applicants thank Examiners Smith and Marschel for extending a personal interview with Applicants' representatives on November 23, 2004. The amendments above and remarks below are believed by Applicant to address the subject matter discussed during the interview. Applicants respectfully request the Examiner's reconsideration and withdrawal of these rejections.

Rejections Under 35 U.S.C. § 101

Claims 22-35 stand rejected under 35 U.S.C. § 101 allegedly for being directed to non-statutory subject matter. The Office maintains that the claims lack either a physical transformation outside the computer or a practical application. Claims 22-35 also stand rejected for being directed to non-statutory subject matter allegedly because the methods merely manipulate numbers or abstract ideas.

Applicants maintain that the claimed invention is directed to statutory subject matter. Claims 20, 24 and 30 have been amended to clearly specify the claimed perturbation step constitutes a physical act on a network of a biochemical system. The claimed methods produce a diagnostic result because they allow the assignment of a cellular function to a component of a biochemical system. In light of these amendments, the rejection is now moot. Therefore, Applicants respectfully request withdrawal of these grounds of rejection.

Rejections Under 35 U.S.C. § 112

Claims 22-35 also stand rejected under 35 U.S.C. § 112, first paragraph, for lack of enablement for a method of assigning any cellular function to a component of a biochemical system allegedly because assignment of any cellular function to a component that is not necessarily linked or outside of the perturbed network or pathway requires undue experimentation.

To satisfy the enablement requirement, all that is required is to teach those skilled in the art how to make and use the invention as claimed without undue experimentation. *Genentech, Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1365 (Fed. Cir. 1997), *Johns Hopkins Univ. v. CellPro, Inc.*, 152 F.3d 1342, 1360-61 (Fed. Cir. 1998). Applicants maintain that the application enables the claimed invention without undue experimentation because the claimed method links components to a perturbed biochemical network when the multidimensional coordinate point is outside of the reference data element region.

For example, the invention claims physically perturbing a component of a network in a reference biochemical system; determining and comparing a multidimensional coordinate point to a reference data element region, and determining if the multidimensional coordinate point is within or outside of the reference data element region. The last recited step of independent claims 22, 24 and 30 all recite that a multidimensional coordinate point outside of the reference region indicates that:

[S]aid component is linked to said perturbed biochemical network, and is thereby assigned a cellular function of said network.

Emphasis added.

The term “thereby” in the above claims clearly links the function of the claimed component to the claimed network. Therefore, the claims expressly recite linkage of a component to the perturbed biochemical network as well as the cellular function of that component to the cellular function of that network. Because the cellular function of a component is linked to a perturbed biochemical network and assigned a cellular function of that network, Applicant is not claiming assignment of any cellular function. Rather, Applicant is claiming

assignment of a function to those components having a multidimensional coordinate point outside of the reference data element region. Accordingly, the full scope of the claims as filed is enabled by the application and withdrawal of this ground of rejection is respectfully requested.

Rejections Under 35 U.S.C. § 102

The rejection of claims 22-35 under 35 U.S.C. § 102(b) as anticipated by Stoughton et al. is maintained allegedly because Stoughton et al. describe comparing microarray profiles that measure relative changes of mRNA and graded drug exposure. These two measurements are alleged to correspond to multidimensional coordinate points.

Applicants maintain that the claimed invention is distinguishable from Stoughton et al. because Stoughton et al. do not describe determining a multidimensional coordinate point. As explained previously, a multidimensional coordinate point corresponds to a coordinate that is a combination of two or more data elements. Stoughton et al. do not describe a method which determines a multidimensional coordinate point as claimed by the invention. The description in Stoughton et al. is directed to measuring transcription in response to graded drug exposure fails to describe determining a multidimensional coordinate point because such responses are directed to a type of dose-response measurement. One or more transcription responses resulting from differing levels of drug result in a one or more different values and not in the integration of all values into a point as Applicants have described and claimed. Therefore, Stoughton et al. do not appear to combine multiple values into a multidimensional coordinate point.

In contrast, the application teaches that a multidimensional coordinate point refers to:

[A] coordinate defined by “n” parameters, where n is the number of components in a biochemical system, or subset thereof, and each parameter is a data element of a component of the biochemical system, or subset thereof.

Application at page 17, line 25 through page 18, line 18.

Thus, a multidimensional coordinate point refers to a single coordinate or point. The term is distinct from the multiple different coordinates described by Stoughton et al.

Applicants have amended the claims to clarify that a multidimensional coordinate represents the integration of multiple parameters into a single point. The claims recite that a multidimensional coordinate point includes n parameters. The claims further recite that the number of parameters n correspond to the number of measured components within a biochemical or constituent system. Stoughton et al. describes neither the integration of multiple parameters into a single point nor does Stoughton et al. describe the inclusion of parameters from all measured components into a single point. Accordingly, Stoughton et al. cannot anticipate the invention as claimed and withdrawal of this ground of rejection is respectfully requested.

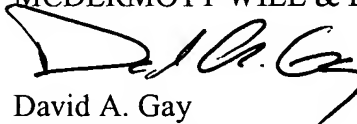
CONCLUSION

In light of the Remarks herein, Applicant submits that the claims are in condition for allowance and respectfully request a notice to this effect. Should the Examiner have any questions, she is invited to call the undersigned attorney.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 502624 and please credit any excess fees to such deposit account.

Respectfully submitted,

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